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Newfoundland and Labrador Region
Quebec Region

Canadian Science Advisory Secretariat
Science Response 2012/007

LABRADOR – ISLAND TRANSMISSION LINK PROJECT - REVIEW OF SPECIES OF SPECIAL CONSERVATION CONCERN COMPONENT STUDY

Context

Nalcor Energy is proposing to develop the *Labrador – Island Transmission Link Project* as part of the larger project of establishing a High Voltage Direct Current transmission system extending from Central Labrador to the Island of Newfoundland's Avalon Peninsula. In preparation for, and support of the Project, Nalcor Energy has submitted to Marine Habitat Protection Section of Fisheries and Oceans Canada in Newfoundland and Labrador a series of component studies. In November 2011, the report entitled "Species of Special Conservation Concern Component Study" was submitted and the purpose of the report is to present a summary of species of special concern for use in the EA and on-going Project planning.

The Marine Habitat Protection Section (NL Region) sent a request to Science Branch on November 7, 2011 for a review of the component study and a response was requested by December 30, 2011. As the Quebec Region is responsible for the management of some of these species in the area covered by the project, regional DFO Science Branch at the Maurice Lamontagne Institute (IML) were requested to review the species at risk for which Quebec region has information to validate whether the information contained in the component study is accurate. An SSRP was used due to the short deadline for advice.

Several common points were made during the review of this report: additional and recent information exists that was not contained in the report, there were some cases where information requires correction. It was suggested that for some species a link to other component studies would have benefited this process. Several species identified as threatened or of special concern by the Committee on the Status of Endangered Wildlife in Canada and several SARA-listed species (occurring or potentially occurring in the Belle Isle) are not listed in this component study.

This Science Response report is from the Fisheries and Oceans Canada, Canadian Science Advisory Secretariat, Regional Science Special Response Process (SSRP) of November 25 to December 30, 2011, Review of the Species of Special Conservation Concern Component Study for the Environmental Assessment report.

Analysis and Responses

The comments provided by Science Branch from IML, are related to sections 3.4, 3.5, and 3.6 only, and for which they were requested to provide comments as an expert authority. Comments provided from Science Branch NL Region pertain to 3.4-3.7.
3.4 Marine Mammals and Sea Turtle
3.4.1 Blue Whale (North West Atlantic population)
3.4.2 Fin Whale
3.4.3 Leatherback Sea Turtle

Other component studies prepared to support the forthcoming EIS, such as the *Supplementary Information Review and Compilation for Marine Mammals and Seabirds*, provide a relatively complete review of the information available. The process and review of the three documents (e.g., *Marine Mammals, Sea Turtles and Seabirds in the Strait of Belle Isle: Supplementary Information Review and Compilation*, *Marine Mammals and Seabirds in the Strait of Belle Isle* from the Marine Environment: Marine Mammals, Sea Turtles and Seabirds Component Study and the current component study being reviewed) developed containing information on marine mammals and seabirds would have benefited from a cross-validation of information among reports, or at a minimum cross-referencing between reports.

The Species of Special Conservation Concern component of the study is relevant to the evaluation of impacts of the Project as it concerns species with special status. However, this report is particularly information-weak, with poor descriptions of project-based sightings, and other data sources, and of information available on seasonal use of the area by each species. It is recommended that the Proponent consolidate the three reports (mentioned above) into one thorough review of the available information, where the seasonal occurrence and abundance of the various species would be presented, and habitat functions for each, with a special highlight on species of special concern, including both the COSEWIC listed and species officially listed by the federal or provincial governments. The document '*Supplementary Information Review and Compilation'* would be a good starting point. However, if the current component is to be maintained as part of the draft EIS, we recommend that this information be provided for each species of special concern, and that all of them be considered. The Proponent intended to include 'all relevant species of special conservation concern, those currently recommended for status, previously considered to be of special conservation concern, and those yet to be re-assessed for formal status (i.e., Schedule 2 and Schedule 3 species, COSEWIC designated, and SSAC designated)'. However, several species identified as threatened or of special concern by the Committee on the Status of Endangered Wildlife in Canada, but not on the provincial or SARA-listed species, are not reviewed in the report. These include killer whales and polar bears. These species are present in the area (see *Supplementary Information Review and Compilation for Marine Mammals and Seabirds*), but are not considered here. Furthermore, SARA-listed species, including harbour porpoises, St. Lawrence beluga, and right whales that may occur in the Belle Isle area are not listed in this component study.

The Strait is ecologically and biologically significant for marine mammals, given the diversity of species using the area (at least 16 species when including beluga and polar bears) and main functions fulfilled, i.e., feeding area and migration corridor for most species, but also reproduction for other species (Lesage et al. 2007). To biologists, the Strait is known as a marine "pinch point" where marine mammal densities are higher

during the late summer and fall as whales aggregate and pass northward to follow herring and mackerel to the Newfoundland north coast and southern Labrador. This should be clearly presented in this document if a consolidated review of the information available is not presented for marine mammals, including a summary table of the species of special concern using the area, their seasonal densities, and the main functions associated with their presence.

Specific Comments:
p. 35: Since 2007 when the Lesage et al. review was put together, there have been repeated observations of lone beluga whales, and at least one large group of 10's of whales, in the Strait of Belle Isle. Recently, a beluga group estimated to number in the thousands, passed northward along the coast near St. Anthony. This indicates that larger groups of this species move around the northern peninsula, and could be encountered in the Strait or use it as a migratory pathway. Whether these animals were from the St Lawrence Estuary or a northern population remains uncertain, but potential populations of origin are all listed as species of concern, threatened or endangered by COSEWIC. Table 3.7 lists the presence of this species as "rare", however when they are present they might be in large numbers, including mothers and young.

P. 35: The gray whale is "extirpated" so extremely unlikely to be sighted in the project area – it is unclear why it is considered, when beluga and right whales are not.

Table 3.7 - The leatherback sea turtle, fin whale, and St. Lawrence beluga should be included in this table. In addition, humpback whales are no longer considered special concern. They have been declared not at risk in 2003.

3.5 Marine Fish

3.5.1 Atlantic Wolffish
3.5.2 Northern Wolffish
3.5.3 Spotted Wolffish

The report presents a brief description of the external morphology and distribution/habitat requirements of three marine fish species (Atlantic, Northern, and Spotted wolfish) in Newfoundland and Labrador waters, as well in the area adjacent to the proposed cable crossing corridor in the Strait of Belle Island, and which are deemed at risk or of special conservation concern by provincial and/or federal legislation. The report also highlights the reasons for designation under conservation legislation and factors responsible for population declines, and provides a list of references on recovery/management plans for each of the fish species considered.

The information used in the report is not up to date, nor were all relevant references considered/cited. For example the presence of spawning areas in coastal Newfoundland have been previously reported (at least for Atlantic Wolffish); there are several recent research documents on wolffish biology, behaviour, abundance and distribution trends in Newfoundland and Labrador waters, which could provide useful information for EA purposes. Overall, with respect to this species, this document is lacking significant information and hence does not provide an adequate assessment of these species.

Specific examples of where information is not adequate:

p. 43 Table-3.5: It is not clear what data source is used for this table. This should be specified and properly cited. The CCRI database is unspeciated for wolffish, therefore if this is the data source for the occurrence in Conception Bay then the occurrence should be listed as "unknown" for all wolffish species.

p. 44, 46, 48: Reference to the CCRI database (CCDA 2001) for each of the three wolffish species regarding Conception Bay is not suitable. Given that this database contains only unspeciated wolffish, this reference can be misleading to readers; especially for the Northern Wolffish section, because no records exist of its occurrence in Conception Bay.
p. 44, 46, 48, 59: All references to Kulka *et al.* 2007 (including in References section) are erroneous. The Kulka reference was published in February 2008.

p. 44: The Atlantic Wolffish do indeed "perform small seasonal inshore-offshore migrations", however it should also be stated "for spawning purposes in inshore, rocky habitats" (from published literature). Also, the distribution section focuses on the deep extent of the distribution, whereas Atlantic Wolffish are also found in shallower waters than the other two species of wolffish.

p. 46: In the Description section, a correction is required as the Northern Wolffish does not have a "pointed snout". The Northern Wolffish snout looks bluntly flattened or "pushed in"; hence it's other Common Name, "Broadhead" Wolffish. In comparison, both Spotted & Atlantic Wolffishes have a slightly protruding, rounded snout. Furthermore, this species does not "often have several dark spots or bars". The dark spots or bars are an infrequent patterning on its body, which is the result of cross-breeding with one of the other two wolffish species. In addition to its more uniform body colour and jelly-like musculature, its bluntly flattened snout and its small pectoral fins (i.e., relative to the large pectorals of the other two wolffish species) distinguish the Northern Wolffish from the Spotted & Atlantic Wolffishes.

p. 48: In the Description section, the statement that Spotted Wolffish has several distinct spots should be corrected as "many" distinct spots on its body (hence it's other Common Name, "Leopardfish").

Based on available data, the Strait of Belle-Isle, including the corridor where Nalcor plans to lay down the marine cables, is not considered to be an important area for wolffish. That being said, there is very little information in the three short sections on wolffish. Statements such as this one «wolffish are characterized by the prominent, canine-like teeth in the front of the jaws, elongate body, and lack of pelvic fins» are true but do not shed any light on the issue. Those sections should be feed with more relevant observations. Potential topics to address/consider are listed below:

- No information is presented on larval and juvenile fish. Larval wolffish may occur in the area and thus juvenile fish may set on the bottom in the area. Small juvenile wolffish are misrepresented in the catch, depending on mesh size. It can be argued though that if juvenile fish settle in the area, they appear to move out of the area at later stages as the research survey low catches suggest.
- The species most likely to occur in shallow rocky coastal areas is the Atlantic Wolffish which is known to spawn in shelters and to guard eggs during several months until they hatch. In spawning habitats, Atlantic Wolffish are unlikely to be

caught (they do not move around and they stick to non-trawlable bottoms). If present, they are expected to be misrepresented in the catch data.

- There is no linkage in the report between marine fish data and environmental data; results from the field surveys in the area (e.g., photos, sediments) need to be discussed, particularly in regard to the characteristics of the Atlantic Wolffish spawning habitat and the known Atlantic and Spotted Wolffish shelter use behavior.

- Most Atlantic Wolffish observations were made south and west of the study area and north along the coast. This needs to be addressed, as it may only be reflective of the repeated localized sampling in these areas (an issue with fixed gears) and no sampling elsewhere (see the point on fishing effort). Nevertheless, there is a strong possibility that the Atlantic Wolffish were in spawning condition in the sampling areas. Another consideration was the knowledge/experience of the persons (e.g., observers, fishermen, scientists) identifying the fish as there is the possibility that some of the fish identified as Atlantic Wolffish may in fact be eelpout (*Zoarces americanus*).
- The diet of wolffish is fairly well known; does the study area appear to support important populations of potential wolffish prey species?
- The figures showing point data where the species occur in the study area and nearby could be improved; the four panels are not described in the legend (2 periods and 2 types of gear). The color coding for different years is not required. It is assumed that the panels for mobile gears include both research surveys and Sentinel whereas the panels for fixed gears include only Sentinel. It is suggested to present separately the research surveys (1 panel) and Sentinel (2 panels, fixed and mobile) and coding the observations by catch in number (or weight) and lumping years. Including negative sets is a must as it allows one to gauge where the effort took place.
- The observations of Northern Wolffish in the fixed gear catch are questionable and it suggests an identification issue. The source data should be checked.
- Fixed gears include gillnet, longlines and a few other gears. It is not clear if several gear types were used or only one. If only one gear type was used, the report should be more specific.

3.5.4 White Shark

The report presents a brief description of the external morphology and distribution/habitat requirements of the marine fish species White Shark in Newfoundland and Labrador waters, as well in the area adjacent to the proposed cable crossing corridor in the Strait of Belle Island, and which is deemed at risk or of special conservation concern by provincial and/or federal legislation. The report also highlights the reasons for designation under conservation legislation and factors responsible for population declines, and provides a list of references on recovery/management plans for the fish species considered.

Specific Comments:

p. 43 Table-3.5: It is not clear what data source is used for this table. This should be specified and properly cited. The CCRI database is unspeciated for shark, therefore if this is the data source for the occurrence in Conception Bay then the occurrence should be listed as "unknown" for all shark species.

p. 48: In the Description section, one of the crucial distinguishing characteristics of any shark species should be mentioned: the shape & size of its teeth. Therefore, this document should have also stated "teeth of the White Shark are large, flat, and triangular with serrated edges."

3.6 Freshwater fish

3.6.1 American eel

The paragraph on American eel is accurate however very limited in its scope. It is somewhat misleading to consider eel as a freshwater species as it has a catadromous life cycle and can also exist as a truly marine species. This is important as eels will have to migrate pass the transmission cable that will be placed across the Strait of Belle Isle. American eel migration may be affected by electromagnetic fields (see Normandeau et al. 2011) and thus this should be considered during the environmental assessment. The possible impact of the cable installation on the marine habitat of the American eel and other threatened fish species are not considered in this report.

Eels would be expected to be found throughout the study area in both coastal waters and fresh waters. Juvenile eels would be expected to arrive in the study area around April-May. There is no data on recruitment of eels to this area and a collapse in recruitment may be the cause for the loss of the eel population in central Canada. Maturing eels will occupy estuaries and freshwater streams throughout the year and likely remain in burrows for most of the winter. However, some eels are believed to return to freshwater from coastal areas to overwinter in freshwater ponds. This is evidenced by spring and fall migrations of eels to and from coastal areas. Mature adults would be leaving the rivers and coastal areas in the fall (Sept-Nov) to embark on their spawning migration to the Sargasso Sea.

COSEWIC designated the American eel as a species of concern in 2006, while the species has not been added to SARA this should at least be mentioned as this designation applied to the entire Canadian population not just Newfoundland and Labrador. It should also be noted that COSEWIC will re-evaluate eel at their next meeting (April 2012) and the designation of this species could change before this project is started.

3.7 COSEWIC / SSAC Designated and *SARA* Schedule 2 and 3 Species

Table 3.7 COSEWIC and SSAC Designated and SARA Schedule 2 and 3 Species of Special Conservation Concern within Newfoundland and Labrador. This table lists Atlantic Salmon (South Newfoundland population) as endangered, threatened or special concern. It should clearly identify the population as threatened according to the COSEWIC designation.

Conclusions

While previous component studies (reports contained within them) for marine mammals and seabirds provided a relatively complete review of available information, this current component study was not complete. Previous reports had been developed containing relevant information on marine mammals and seabirds. A consolidation of the reports with a cross-validation of information among reports, or at a minimum cross-referencing between reports if they are to be maintained separate would have been useful.

Several common points were raised by reviewers of different sections of this report. Additional and more recent information exists and should be included in this report. While the information provided was generally correct for some species, species descriptions were too brief to be informative in this current component study. There were also cases where the information provided was incorrect and should be corrected (e. g., details on wolffish morphology, COSEWIC and SARA designations).

Several species identified as threatened or of special concern by the Committee on the Status of Endangered Wildlife in Canada, and several SARA listed species (occurring or potentially occurring in the Belle Isle) are not listed in this component study (e.g., Atlantic Cod, Atlantic Salmon, harbour porpoises, St. Lawrence beluga, right whales).

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Sources of information

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